



Page Proof Instructions and Queries

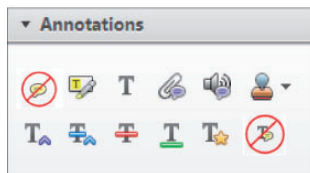
Journal Title: Cephalalgia (CEP)

Article Number: 658710

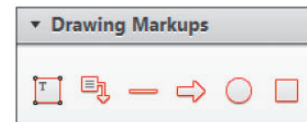
Greetings, and thank you for publishing with SAGE. We have prepared this page proof for your review. Please respond to each of the below queries by digitally marking this PDF using Adobe Reader.

Click “Comment” in the upper right corner of Adobe Reader to access the mark-up tools as follows:

For textual edits, please use the “Annotations” tools. Please refrain from using the two tools crossed out below, as data loss can occur when using these tools.



For formatting requests, questions, or other complicated changes, please insert a comment using “Drawing Markups.”



Detailed annotation guidelines can be viewed at: <http://www.sagepub.com/repository/binaries/pdfs/AnnotationGuidelines.pdf>

Adobe Reader can be downloaded (free) at: <http://www.adobe.com/products/reader.html>.

No.	Query
	Please confirm that all author information, including names, affiliations, sequence, and contact details, is correct.
	Please review the entire document for typographical errors, mathematical errors, and any other necessary corrections; check headings, tables, and figures.
	Please confirm that the Funding and Conflict of Interest statements are accurate.
	Please ensure that you have obtained and enclosed all necessary permissions for the reproduction of artistic works, (e.g. illustrations, photographs, charts, maps, other visual material, etc.) not owned by yourself. Please refer to your publishing agreement for further information.
	Please note that this proof represents your final opportunity to review your article prior to publication, so please do send all of your changes now.



Smell of migraine: Osmophobia as a clinical diagnostic marker?

Dear Editor,

We read with great interest the paper by Silva-Néto et al., recently published in *Cephalalgia* (1). In their prospective survey, the authors conclude that 'headache triggered by odors may be considered a factor of differentiation between migraine and other primary headaches'. The diagnosis of a primary headache is clinical and based on the fulfilment of the features reported by the patient with the diagnostic criteria of *The International Classification of Headache Disorders, 3rd edition (beta version)* (ICHD 3beta) (2). Until now, not a single clinical pathognomonic feature has been identified for the diagnosis of migraine. In the course of a migraine attack, patients frequently report discomfort from odours or perfumes (osmophobia); less often, a specific odour may act as a recognizable causative factor. Some of these peculiar aspects have been noted in the past, both in classic ages (Aretheus, 2nd century B.C.) and in more recent times (Gowers, 19th century) (3). Curiously, the olfactive sphere of migraine in both its aspects has not been considered in depth. In a previous published paper on the topic, among the 496 patients participating in the study, osmophobia was reported by 43% and 40% of those with a diagnosis of either migraine without aura or migraine with aura; moreover, the olfactory stimulus triggered the attack in 11%. None of the 90 tension-type headache patients reported osmophobia or attacks triggered by an olfactory stimulus (4).

Since the previous edition of the ICHD, the diagnosis of probability has been introduced, to be applied when all the required criteria but one are fulfilled for that type of headache. The ICHD 3beta criteria for the diagnosis of migraine remained unchanged despite the fact that, at present, in some instances the headache features reported by the patient may overlap the diagnostic criteria of different forms of headache. The differential diagnosis between migraine and tension-type headache is one of the most frequent occurrences generating overlap among their diagnostic criteria. From this perspective, new supplementary diagnostic features may be helpful for a better distinction. The literature consistently gives evidence that osmophobia may be

considered a clinical marker for migraine vs other primary headaches, including tension-type headache. As migraine patients reporting the olfactory stimulus as a trigger are 25% of those reporting osmophobia (4), this symptom should also be considered a clinical marker. Therefore, osmophobia should be reintroduced among the major migraine diagnostic criteria. Indeed, it had already been included in the ICHD-2 appendix and then deleted in the ICHD 3beta, despite the literature data demonstrating that this criterion adds sensibility and specificity to the diagnosis (4,5).

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

1. Pereira Silva-Néto R, Rodrigues AB, Coelho Cavalcante D, et al. May headache triggered by odors be regarded as a differentiating factor between migraine and other primary headaches? *Cephalalgia*. Epub ahead of print 27 February 2016. DOI: 10.1177/0333102416636098.
2. The International Classification of Headache Disorders, 3rd edition (beta version). *Cephalalgia* 2013; 9: 627–808.
3. Dainese F, Maggioni F, Mainardi F, et al. Osmophobia in migraine and tension-type headache. *J Headache Pain* 2004; 5(Suppl 1): 7–8.
4. Zanchin G, Dainese F, Trucco M, et al. Osmophobia in migraine and tension-type headache and its clinical features in patients with migraine. *Cephalalgia* 2007; 27: 1061–1068.
5. Mainardi F, Lisotto C, Maggioni F, et al. Migraine and probable migraine. *J Headache Pain* 2009; 10(Suppl): 6–7.

Federico Mainardi¹, Ferdinando Maggioni² and
Giorgio Zanchin²

¹Headache Centres, Neurological Division, SS Giovanni
e Paolo Hospital, Venice, Italy

²Department of Neurosciences, Padua University,
Padua, Italy

Corresponding author:

Federico Mainardi, Headache Centre, Neurological
Division, SS Giovanni e Paolo Hospital, Castello 6777 I,
30122 Venice, Italy.

Email: fmmainardi@iol.it